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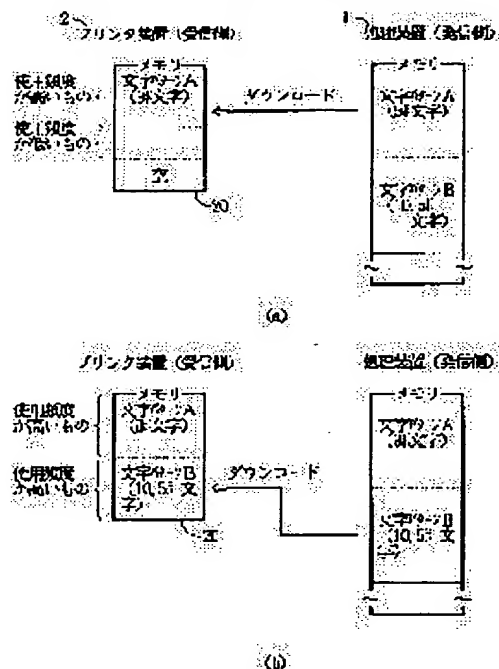
MIKAMI IKUO

(54) METHOD FOR DIVIDING AND STORING CHARACTER PATTERN BY USE FREQUENCY

(57)Abstract:

PURPOSE: To improve the use efficiency of a memory as to the character pattern dividing and storing method of a device (printer device) which downloads character patterns from a host and uses them.

CONSTITUTION: When only character patterns A as a basic function are used, patterns which is high in use frequency and is low in use frequency are stored by dividing an area within the permissible range of the memory, but when character patterns B are used, patterns which are high in use frequency among the character pattern B are stored by replacing patterns of low use frequency among the character patterns A. When character patterns which are not in the memory in the device are used, they are requested of the host and used without specially being stored in the memory in the device.



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CLAIMS

[Claim(s)]

[Claim 1] Receiving-side equipment which downloads and uses a character pattern from origination-side equipment (host) (1) (2) When setting and using only one character-pattern A What has the high operating frequency of this character-pattern A, and what has low operating frequency are managed in a separate address field. This receiving-side equipment (2) In case it is in the tolerance of memory (20), it stores and other character-pattern B is used What has the high operating frequency of this character-pattern B is exchanged for what has the low operating frequency of the above-mentioned character-pattern A. Character-pattern A which stores in this memory (20) and is not in the memory in this receiving set (20), Or when using B, it is origination-side equipment. (host) It requires of (1) and is a receiving set (2) especially. The character-pattern division storing approach classified by operating frequency characterized by using it, without storing in inner memory (20).

[Claim 2] Receiving-side equipment which downloads and uses a character pattern from origination-side equipment (host) (1) (2) It sets. One character-pattern A and other character-pattern B are made into a pair. And according to operating frequency Storing address (X, Yx, y) The alphabetic character storing address information managed table (21) which assigns to a position and is managed is prepared. Origination-side equipment (host) Character code incidental to one character-pattern A which received from (1) (**) On a radical, the above-mentioned alphabetic character storing address information managed table (21) is searched. the address (X, Y) of the memory (20) which stores applicable alphabetic character Aa- Information region (21a) from -- This address (X, Y) The address detected and this detected (X, Y) Alphabetic character Aa- of relevance is stored. This origination-side equipment (host) While directing that a character code incidental to the character pattern which received from (1) is other character-patterns B Based on a character code (**) incidental to this character-pattern B, the above-mentioned alphabetic character storing address information managed table (21) is searched. The storing address corresponding to character-pattern A of memory (20) which stores applicable alphabetic character Aa- (X, Y) It detects. The detected this address (X, Y) When it has been recognized as it being a high use frequency alphabetic character The detected this storing address (X, Y) The address which added as "offset" the address value which shows the memory area which stores the alphabetic character of the above-mentioned character-pattern A (x y) It generates. The generated this address (x y) The above-mentioned alphabetic character storing address information managed table (21), Alphabetic character storing address information region corresponding to the above-mentioned character-pattern B (21b) The address set up and this set up (x y) Alphabetic character Ba- of this character-pattern B is stored. By the applicable alphabetic character Ba - storing alphabetic character storing address information region (21a) of the above-mentioned alphabetic character storing address information managed table (21) corresponding to alphabetic character Ax- of the low use frequency of the deleted above-mentioned character-pattern A a predetermined bit -- flag "nothing on equipment memory" (**) The address (X, Y) set up and this detected When it has been recognized as it not being a high use frequency alphabetic character It is the above-mentioned origination-side equipment, without performing storing of the ** and a character pattern. (host) The character-pattern

division storing approach classified by operating frequency characterized by changing to storing processing of other alphabetic characters received from (1).

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the division storing approach of the character pattern in the equipment which downloads and uses a character pattern from a host, for example, printer equipment.

[0002] the case where the latest printer equipment requires various printing formats, are in the trend which also diversifies the classification of the character pattern needed for printing, and this character pattern is downloaded from the host of a high order — the above — in order to realize various printing formats, it is effective in the character pattern to need And the approach of storing in the memory of the printer equipment concerned is required economically.

[0003]

[Description of the Prior Art] Drawing 7 and drawing 8 are drawings explaining the conventional character-pattern storing approach, drawing 7 shows the example of a configuration of data processing system, and it is drawing 8 (a). The case where character-pattern A, for example, the character pattern of nine points, or character-pattern B, for example, the character pattern of 10.5 points, is stored is shown, and it is drawing 8 (b). The case where what has high operating frequency is stored about character patterns A and B is shown.

[0004] the data processing system shown in drawing 7 — setting — printer equipment 2 — high order equipment (host) 1 File storage unit connected 10 from — a character pattern required for printing — downloading — self memory (bit map memory) the inside of 20 — storing — high order equipment (host) 1 It prints in the alphabetic character to direct.

[0005] In this case, printer equipment As a basic function of 2, there is character-pattern [of nine points] A and character-pattern [of 10.5 points] B presupposes that it is required as an addition function. And when it is going to store the sum total of this character-pattern A and character-pattern B, it is this printer equipment. The 2 above-mentioned memory 20 It shall have exceeded capacity.

[0006] Information required for implementation of a function is printer equipment. The 2 above-mentioned memory 20 When it is over capacity, they are drawing 8 (a) and (b) conventionally. Two kinds of solutions were taken. Drawing 8 (a) The shown approach is in a condition scattering regardless of the sequence of operating frequency about required character-pattern A or B, and is this memory about all. 20 It stored.

[0007] Drawing 8 (b) With the shown approach, it is this memory only about what has the high operating frequency of the beginning to the above-mentioned character patterns A and B. 20 It stored.

[0008]

[Problem(s) to be Solved by the Invention] Therefore, drawing 8 (a) By the shown storing approach Since for example, character-pattern A (for example, nine points) which is a basic function is stored regardless of operating frequency, Other character-patterns B (for example, character pattern of 10.5 points) which is not stored now It is needed and is this memory. 20 If it downloads to a predetermined field A character pattern with the high operating frequency of the character-pattern [of nine points] A required as a basic function is transposed to character-

pattern B, and it is memory. 20 There was a problem of stopping existing upwards.

[0009] Moreover, drawing 8 (b) Even when not using character-pattern B by the shown storing approach, a part of character-pattern A of a basic function is this memory by this character-pattern B. 20 Since it stopped existing upwards, there was a problem that the engine performance which gains a character pattern required for printing will fall.

[0010] This invention aims at offering the character-pattern storing approach which can raise the utilization ratio of memory, when it divides and stores a character pattern in memory in view of the above-mentioned conventional fault in the equipment which downloads and uses a character pattern from a host, for example, printer equipment.

[0011]

[Means for Solving the Problem] Drawing 1 and drawing 2 are drawings explaining the principle of this invention. The above-mentioned trouble is solved by the character-pattern division storing approach according to operating frequency constituted as following.

[0012] (1) a character pattern — origination-side equipment (host) 1 from — receiving-side equipment downloaded and used In 2, when using only one character-pattern A What has the high operating frequency of this character-pattern A, and what has low operating frequency are managed in a separate address field. This receiving-side equipment Two memory 20 In case it is in tolerance, it stores and other character-pattern B is used What has the high operating frequency of this character-pattern B is exchanged for what has the low operating frequency of the above-mentioned character-pattern A. This memory 20 It stores and is the memory in this receiving set. 20 When using character-pattern A which is not, or B, it is origination-side equipment. (host) 1 It requires and is a receiving set especially. Memory in two 20 Without storing, it constitutes so that it may be used.

[0013] (2) a character pattern — origination-side equipment (host) 1 from — receiving-side equipment downloaded and used In 2 One character-pattern A and other character-pattern B are made into a pair. And according to operating frequency Storing address (X, Yx, y) Alphabetic character storing address information managed table which assigns to a position and is managed 21 It prepares. origination-side equipment (host) 1 from — a radical [** / incidental to one character-pattern A which received / character code] — the above-mentioned alphabetic character storing address information managed table 21 It searches. Memory which stores applicable alphabetic character Aa- 20 Address (X, Y) Information region 21a to this address (X, Y) It detects. the detected this address (X, Y) alphabetic character Aa- of relevance — storing — this origination-side equipment (host) 1 from, while directing that a character code incidental to the character pattern which received is other character-patterns B Based on character code ** incidental to this character-pattern B, it is the above-mentioned alphabetic character storing address information managed table. 21 It searches. Memory which stores applicable alphabetic character Aa- 20 The storing address corresponding to character-pattern A (X, Y) It detects. The detected this address (X, Y) When it has been recognized as it being a high use frequency alphabetic character The address which added the address value which shows the memory area which stores the alphabetic character of the above-mentioned character-pattern A in the detected this storing address (X, Y) as "offset" (x y) It generates. the generated this address (x y) The above-mentioned alphabetic character storing address information managed table 21 Alphabetic character storing address information region corresponding to the above-mentioned character-pattern B The address which set it as 21b and was this set up (x y) Alphabetic character Ba- of this character-pattern B is stored. By the applicable alphabetic character Ba - storing Above-mentioned alphabetic character storing address information managed table corresponding to alphabetic character Ax- of the low use frequency of the deleted above-mentioned character-pattern A 21 Alphabetic character storing address information region 21a, When it has been recognized as the address which set up and this detected flag ** "nothing on equipment memory" in the predetermined bit not being a high use frequency alphabetic character without it performs storing of the ** and a character pattern — above-mentioned origination-side equipment (host) 1 from — it constitutes so that it may change to storing processing of other received alphabetic characters.

[0014]

[Function] That is, this invention is information effective in the memory of the capacity restricted in the equipment which adopts the download approach (receiving side), for example, printer equipment. (character-pattern information) It is an approach for storing.

[0015] In order to perform printing by character-pattern A which is the basic function of this printer equipment, suppose that the information on character-pattern A is required, and the information on character-pattern B is required in order to perform printing by character-pattern B which is an addition function. And the sum total of the information on character patterns A and B presupposes that it had exceeded the memory space of this printer equipment.

[0016] Character-pattern B which is an addition function in such cases is receiving from the equipment (host) of origination side which stores only the information on this character-pattern A in memory as much as possible in using only character-pattern A which is a basic function, without using it. At this time, in this invention, a field is divided and character-pattern A with high operating frequency and character-pattern A with low operating frequency are stored.

[0017] And in character-pattern B, when the user of this printer equipment chooses character-pattern B which is the above-mentioned addition function, what has high operating frequency is stored in a field at that time, although operating frequency is comparatively low the empty field of memory, and in the above-mentioned character-pattern A (consequently, the information on comparatively low character-pattern A of the original operating frequency is transposed to the information on character-pattern B, and is deleted from on memory).

[0018] That is, in character patterns A and B, it is chosen sequentially from what has high operating frequency, and a result which is in the tolerance of memory and is stored is brought. When it gains from there directly when the information which it needs in the information on character-pattern A (B) in actually printing by character-pattern A (or character-pattern B which is an addition function) which is a basic function is stored on memory, and there is nothing on memory, information (character-pattern information) required for origination-side equipment (host) is required.

[0019] If it does in this way, when not using character-pattern B which is an addition function, a case can make the most of memory. That is, memory is always utilizable for the maximum by being in memory tolerance only about ***** A, storing ***** as much as possible, when not using character-pattern B which is an addition function, and exchanging what has the high operating frequency of this character-pattern B, and what has the low operating frequency of the information on character-pattern A which is a basic function, in using character-pattern B which is an addition function (replacement).

[0020]

[Example] The example of this invention is explained in full detail with a drawing below. Relation with the memory (bit map memory) in which above-mentioned drawing 1 and drawing 2 are drawings explaining the principle of this invention, drawing 3 - drawing 5 are drawings having shown one example of this invention, and drawing 3 stores character code **, **, an alphabetic character storing address information managed table, and a character pattern is shown, and it is drawing 4, Drawing 5 shows the flow of storing actuation of the character pattern by this invention, and drawing 6 shows the acquisition processing flow of a character pattern.

[0021] Equipment 2 which downloads and uses character-pattern ** and ** from a host in this invention (printer equipment) When setting and using only character-pattern A which is a basic function In case it is in the tolerance of memory about what has the high operating frequency of this character-pattern A, and what has low operating frequency, a field is divided and stored and another character-pattern B is used What has the high operating frequency of this character-pattern B is exchanged for what has the low operating frequency of the above-mentioned character-pattern A, and is stored, and it is equipment. Memory in two 20 In using the character pattern which is not host 1 — requiring — especially — equipment Memory 20 in two a means to use it, without storing — concrete — alphabetic character storing address information managed table 21 It is the means which the storing management tool to depend needs for carrying out this invention. In addition, the same sign shows the same object through the complete diagram.

[0022] Hereafter, drawing 3 - drawing 6 R> 6 explain the character-pattern division storing

approach classified by operating frequency of this invention, referring to drawing 1 and 2. First, drawing 3 (a) Host Character code ** which is along with the character pattern which received from 1, and **, Alphabetic character storing address information managed table 21 Bit map memory which stores a character pattern 20 Relation is shown.

[0023] above-mentioned alphabetic character storing address information managed table 21 Character-pattern A which is a basic function as illustrated (for example, nine-point alphabetic character), The storing address on the bit map memory (memory) 20 of character-pattern B (for example, 10.5-point alphabetic character) which is an addition function (with X and Y) x y It is drawing 3 (b) to the order from an alphabetic character with operating frequency high [making it a pair]. As shown The address which divided the field (X, Y and x, y) It has composition to manage and is an initial state. (condition before downloading a character pattern) Although it sets and all the addresses corresponding to character-pattern A (nine-point alphabetic character) which is a basic function are set up Character-pattern B which is an addition function (10.5 point alphabetic character) Flag (for example, this alphabetic character storing address information managed table the 21 most significant bits) ** which shows what "is not existed on memory" to an address storing region is set to "ON."

[0024] Drawing 4 and drawing 5 are flows of operation which show the character-pattern division storing approach by this invention. first, origination-side equipment (host) 1 from — two or more character patterns download. (Processing step 100 reference) At first, the character pattern of character-pattern A (nine-point alphabetic character) which is a basic function is received. (Processing step 101 reference) Based on character code ** incidental to the received this character pattern, it is drawing 3 (a). As shown Alphabetic character storing address information managed table 21 The field corresponding to [search and] applicable character code **, Address information region of character-pattern A which is the above-mentioned basic function From 21a bit map memory which should store the pattern of an applicable alphabetic character 20 The upper address (X, Y) investigating — the address (X, Y) character-pattern [of the character code which carried out / above-mentioned / reception] A — { — the example of drawing 3 (a) — "—" — pattern} of alphabetic character Aa is stored. (Processing step 102,103 reference) The above-mentioned actuation is performed about all the alphabetic characters received first as this character-pattern A. As mentioned above, the storing address of an applicable alphabetic character (X, Y) Since it is beforehand set corresponding to operating frequency, a field is divided sequentially from an alphabetic character with high operating frequency, and it is drawing 3 (b). It is stored like. (Processing step 109 reference) Next, character-pattern B which is an addition function (10.5-point alphabetic character) A character pattern is received by two or more characters.

[0025] Based on character code ** incidental to the received this character pattern, it is drawing 3 (a). As shown Alphabetic character storing address information managed table 21 The field corresponding to [search and] applicable character code **, Address information region of character-pattern A which is the above-mentioned basic function From 21a Bit map memory which should store the pattern of an applicable alphabetic character 20 The upper address (X, Y) It investigates. Bit map memory which should add to it the address value {refer to drawing 3 (b)} which shows the storing field of applicable character-pattern A as an "offset" value, and should store the character pattern of relevance of the character-pattern B concerned in it 20 The upper address (x y) It computes. (Processing step 104 reference) This address (x y) In character-pattern B It is [whether it is the alphabetic character of high use frequency, and] this address (x y). When it saw and judges and is judged with it being the alphabetic character of high use frequency The following processing step Although it progressed to 106, when it is not judged with it being the alphabetic character of high use frequency, it is already bit map memory. 20 In order to recognize it as it not being the alphabetic character stored upwards and to move to storing processing of the following received character, it is the above-mentioned processing step. It moves to processing of 109. (Processing step 105 reference) The address by which calculation was carried out [above-mentioned] when it judged that the alphabetic character of this character-pattern B which received is an alphabetic character of high use frequency (x y) The above-mentioned alphabetic character storing address information managed table 21

Address information region corresponding to this character-pattern B It stores in 21b.
(Processing step 106 reference) About character-pattern B of character code ** which carried out [above-mentioned] reception, it is the above-mentioned bit map memory. The address which carried out [above-mentioned] calculation on 20 (x y) It stores. As mentioned above (Processing step 107) The storing field of the high frequency use character pattern of this character-pattern B Since it is the field where the character pattern with operating frequency low in comparison of character-pattern A is stored Alphabetic character storing address information managed table region of character-pattern A (nine points) deleted by storing of an applicable alphabetic character (specifically replacement) 21a, For example, flag ** which shows what "is not existed in bit map memory 20 up [of printer equipment]" is set as a most significant bit location ("ON").

[0026] It is drawing 1 about above-mentioned actuation and character-pattern acquisition actuation Drawing 2 When it reaches and the flow of drawing 6 of operation explains, it is usually printer equipment because of implementation (basic statement character size is made into nine points in this example) of printing in the nine-point alphabetic character which is a basic function. In 2, it is memory in all the nine-point character patterns. 20 It stores. In this case, when printing every alphabetic character, it is direct printer equipment. A direct character pattern can be obtained from on the memory in two. [Refer to processing step 110-112 for drawing 1 (a) and drawing 6 .]

an alphabetic character with operating frequency high when printing of for example, a 10.5-point alphabetic character other than an alphabetic character is required 9 point — nine points / 10.5 points — both — this printer equipment Memory in two 20 storing — a required character pattern — this memory 20 from — it is gained and used. [Refer to processing step 110-112 for drawing 1 (b) and drawing 6 .]

thereby — operating frequency — low — printer equipment Memory in two 20 from — the nine-point character pattern and the 10.5-point character pattern which was not able to be stored of the deleted basic statement character — origination-side equipment (host) 1 It receives and gains by requiring. { Drawing 2 (c), processing step 113 reference of drawing 6 }

By carrying out like this, it is printer equipment. 2 can demonstrate the printing engine performance which employed the memory resource which possesses according to the function used (a nine-point chisel or 9 or 10.5 points) in the maximum efficiently.

[0027]

[Effect of the Invention] As explained to the detail, as mentioned above, the character-pattern division storing approach classified by operating frequency of this invention a character pattern — origination-side equipment (host) from — receiving-side equipment downloaded and used (printer equipment) When setting and using only character-pattern A of a basic function What has the high operating frequency of this character-pattern A, and what has low operating frequency are managed in a separate address field. In case it is in the tolerance of the memory of this printer equipment, it stores and character-pattern B which is an addition function is used Character-pattern A which exchanges what has the high operating frequency of this character-pattern B for what has the low operating frequency of the above-mentioned character-pattern A, stores it in this memory, and is not in the memory in this printer equipment, Or when using B, it is origination-side equipment. (host) Since it is made to use it, without requiring and storing in the memory in printer equipment especially The effectiveness that the place which induces the effectiveness of making constraint of the support function by limitation of the memory space of printer equipment easing, and contributes to improvement in the use effectiveness of memory is large is acquired.

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TECHNICAL FIELD

[Industrial Application] This invention relates to the division storing approach of the character pattern in the equipment which downloads and uses a character pattern from a host, for example, printer equipment.

[0002] the case where the latest printer equipment requires various printing formats, are in the trend which also diversifies the classification of the character pattern needed for printing, and this character pattern is downloaded from the host of a high order — the above — in order to realize various printing formats, it is effective in the character pattern to need. And the approach of storing in the memory of the printer equipment concerned is required economically.

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PRIOR ART

[Description of the Prior Art] Drawing 7 and drawing 8 are drawings explaining the conventional character-pattern storing approach, drawing 7 shows the example of a configuration of data processing system, and it is drawing 8 (a). The case where character-pattern A, for example, the character pattern of nine points, or character-pattern B, for example, the character pattern of 10.5 points, is stored is shown, and it is drawing 8 (b). The case where what has high operating frequency is stored about character patterns A and B is shown.

[0004] the data processing system shown in drawing 7 — setting — printer equipment 2 — high order equipment (host) 1 File storage unit connected 10 from — a character pattern required for printing — downloading — self memory (bit map memory) the inside of 20 — storing — high order equipment (host) 1 It prints in the alphabetic character to direct.

[0005] In this case, printer equipment As a basic function of 2, there is character-pattern [of nine points] A and character-pattern [of 10.5 points] B presupposes that it is required as an addition function. And when it is going to store the sum total of this character-pattern A and character-pattern B, it is this printer equipment. The 2 above-mentioned memory 20 It shall have exceeded capacity.

[0006] Information required for implementation of a function is printer equipment. The 2 above-mentioned memory 20 When it is over capacity, they are drawing 8 (a) and (b) conventionally. Two kinds of solutions were taken. Drawing 8 (a) The shown approach is in a condition scattering regardless of the sequence of operating frequency about required character-pattern A or B, and is this memory about all. 20 It stored.

[0007] Drawing 8 (b) With the shown approach, it is this memory only about what has the high operating frequency of the beginning to the above-mentioned character patterns A and B. 20 It stored.

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EFFECT OF THE INVENTION

[Effect of the Invention] As explained to the detail, as mentioned above, the character-pattern division storing approach classified by operating frequency of this invention a character pattern — origination-side equipment (host) from — receiving-side equipment downloaded and used (printer equipment) When setting and using only character-pattern A of a basic function What has the high operating frequency of this character-pattern A, and what has low operating frequency are managed in a separate address field. In case it is in the tolerance of the memory of this printer equipment, it stores and character-pattern B which is an addition function is used Character-pattern A which exchanges what has the high operating frequency of this character-pattern B for what has the low operating frequency of the above-mentioned character-pattern A, stores it in this memory, and is not in the memory in this printer equipment, Or when using B, it is origination-side equipment. (host) Since it is made to use it, without requiring and storing in the memory in printer equipment especially The effectiveness that the place which induces the effectiveness of making constraint of the support function by limitation of the memory space of printer equipment easing, and contributes to improvement in the use effectiveness of memory is large is acquired.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Therefore, drawing 8 (a) By the shown storing approach Since for example, character-pattern A (for example, nine points) which is a basic function is stored regardless of operating frequency, Other character-patterns B (for example, character pattern of 10.5 points) which is not stored now It is needed and is this memory. 20 If it downloads to a predetermined field A character pattern with the high operating frequency of the character-pattern [of nine points] A required as a basic function is transposed to character-pattern B, and it is memory. 20 There was a problem of stopping existing upwards.

[0009] Moreover, drawing 8 (b) Even when not using character-pattern B by the shown storing approach, a part of character-pattern A of a basic function is this memory by this character-pattern B. 20 Since it stopped existing upwards, there was a problem that the engine performance which gains a character pattern required for printing will fall.

[0010] This invention aims at offering the character-pattern storing approach which can raise the utilization ratio of memory, when it divides and stores a character pattern in memory in view of the above-mentioned conventional fault in the equipment which downloads and uses a character pattern from a host, for example, printer equipment.

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MEANS

[Means for Solving the Problem] Drawing 1 and drawing 2 are drawings explaining the principle of this invention. The above-mentioned trouble is solved by the character-pattern division storing approach according to operating frequency constituted as following.

[0012] (1) a character pattern — origination-side equipment (host) 1 from — receiving-side equipment downloaded and used In 2, when using only one character-pattern A What has the high operating frequency of this character-pattern A, and what has low operating frequency are managed in a separate address field. This receiving-side equipment Two memory 20 In case it is in tolerance, it stores and other character-pattern B is used What has the high operating frequency of this character-pattern B is exchanged for what has the low operating frequency of the above-mentioned character-pattern A. This memory 20 It stores and is the memory in this receiving set. 20 When using character-pattern A which is not, or B, it is origination-side equipment. (host) 1 It requires and is a receiving set especially. Memory in two 20 Without storing, it constitutes so that it may be used.

[0013] (2) a character pattern — origination-side equipment (host) 1 from — receiving-side equipment downloaded and used In 2 One character-pattern A and other character-pattern B are made into a pair. And according to operating frequency Storing address (X, Yx, y) Alphabetic character storing address information managed table which assigns to a position and is managed 21 It prepares. origination-side equipment (host) 1 from — a radical [** / incidental to one character-pattern A which received / character code] — the above-mentioned alphabetic character storing address information managed table 21 It searches. Memory which stores applicable alphabetic character Aa- 20 Address (X, Y) Information region 21a to this address (X, Y) It detects. the detected this address (X, Y) alphabetic character Aa- of relevance — storing — this origination-side equipment (host) 1 from, while directing that a character code incidental to the character pattern which received is other character-patterns B Based on character code ** incidental to this character-pattern B, it is the above-mentioned alphabetic character storing address information managed table. 21 It searches. Memory which stores applicable alphabetic character Aa- 20 The storing address corresponding to character-pattern A (X, Y) It detects. The detected this address (X, Y) When it has been recognized as it being a high use frequency alphabetic character The address which added the address value which shows the memory area which stores the alphabetic character of the above-mentioned character-pattern A in the detected this storing address (X, Y) as "offset" (x y) It generates. the generated this address (x y) The above-mentioned alphabetic character storing address information managed table 21 Alphabetic character storing address information region corresponding to the above-mentioned character-pattern B The address which set it as 21b and was this set up (x y) Alphabetic character Ba- of this character-pattern B is stored. By the applicable alphabetic character Ba — storing Above-mentioned alphabetic character storing address information managed table corresponding to alphabetic character Ax- of the low use frequency of the deleted above-mentioned character-pattern A 21 Alphabetic character storing address information region 21a, When it has been recognized as the address which set up and this detected flag ** "nothing on equipment memory" in the predetermined bit not being a high use frequency alphabetic character without it performs storing of the ** and a character pattern — above-mentioned

origination-side equipment (host) 1 from — it constitutes so that it may change to storing processing of other received alphabetic characters.

[Translation done.]

*** NOTICES ***

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

OPERATION

[Function] That is, this invention is information effective in the memory of the capacity restricted in the equipment which adopts the download approach (receiving side), for example, printer equipment. (character-pattern information) It is an approach for storing.

[0015] In order to perform printing by character-pattern A which is the basic function of this printer equipment, suppose that the information on character-pattern A is required, and the information on character-pattern B is required in order to perform printing by character-pattern B which is an addition function. And the sum total of the information on character patterns A and B presupposes that it had exceeded the memory space of this printer equipment.

[0016] Character-pattern B which is an addition function in such cases is receiving} from the equipment (host) of {origination side which stores only the information on this character-pattern A in memory as much as possible in using only character-pattern A which is a basic function, without using it. At this time, in this invention, a field is divided and character-pattern A with high operating frequency and character-pattern A with low operating frequency are stored.

[0017] And in character-pattern B, when the user of this printer equipment chooses character-pattern B which is the above-mentioned addition function, what has high operating frequency is stored in a field at that time, although operating frequency is comparatively low the empty field of memory, and in the above-mentioned character-pattern A (consequently, the information on comparatively low character-pattern A of the original operating frequency is transposed to the information on character-pattern B, and is deleted from on memory).

[0018] That is, in character patterns A and B, it is chosen sequentially from what has high operating frequency, and a result which is in the tolerance of memory and is stored is brought. When it gains from there directly when the information which it needs in the information on character-pattern A (B) in actually printing by character-pattern A (or character-pattern B which is an addition function) which is a basic function is stored on memory, and there is nothing on memory, information (character-pattern information) required for origination-side equipment (host) is required.

[0019] If it does in this way, when not using character-pattern B which is an addition function, a case can make the most of memory. That is, memory is always utilizable for the maximum by being in memory tolerance only about ***** A, storing ***** as much as possible, when not using character-pattern B which is an addition function, and exchanging what has the high operating frequency of this character-pattern B, and what has the low operating frequency of the information on character-pattern A which is a basic function, in using character-pattern B which is an addition function (replacement).

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] Drawing explaining the principle of this invention (the 1)

[Drawing 2] Drawing explaining the principle of this invention (the 2)

[Drawing 3] Drawing having shown one example of this invention (the 1)

[Drawing 4] Drawing having shown one example of this invention (the 2)

[Drawing 5] Drawing having shown one example of this invention (the 3)

[Drawing 6] Drawing having shown one example of this invention (the 4)

[Drawing 7] Drawing explaining the conventional character-pattern storing approach (the 1)

[Drawing 8] Drawing explaining the conventional character-pattern storing approach (the 2)

[Description of Notations]

1 Origination-Side Equipment (Host) 2 Receiving-Side Equipment, Or Printer Equipment

20 Memory (Bit Map Memory)

21 Alphabetic Character Storing Address Information Managed Table

21a The address information region of character-pattern A

21b The address information region of character-pattern B

** The character code of accompanying in character-pattern A

** The character code of accompanying in character-pattern B

** A flag "nothing on equipment memory"

100 - 107,110-113 Processing Step

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

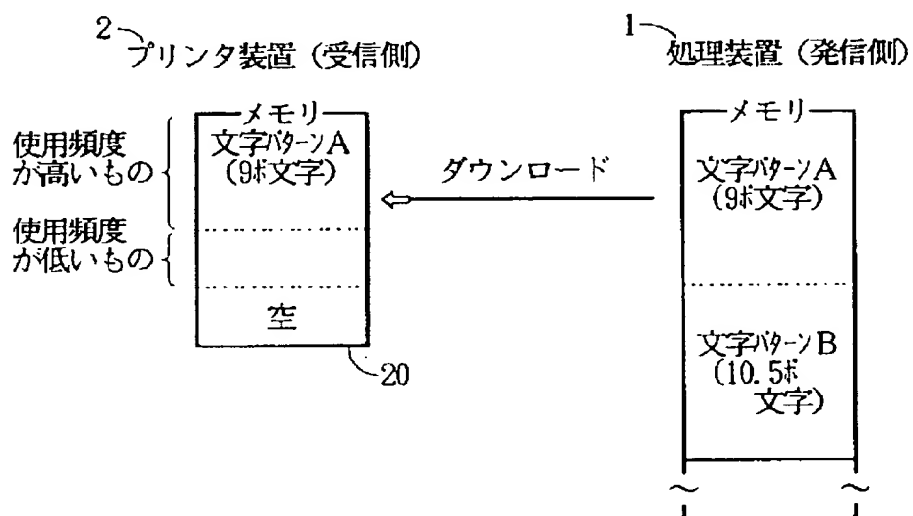
2.*** shows the word which can not be translated.

3.In the drawings, any words are not translated.

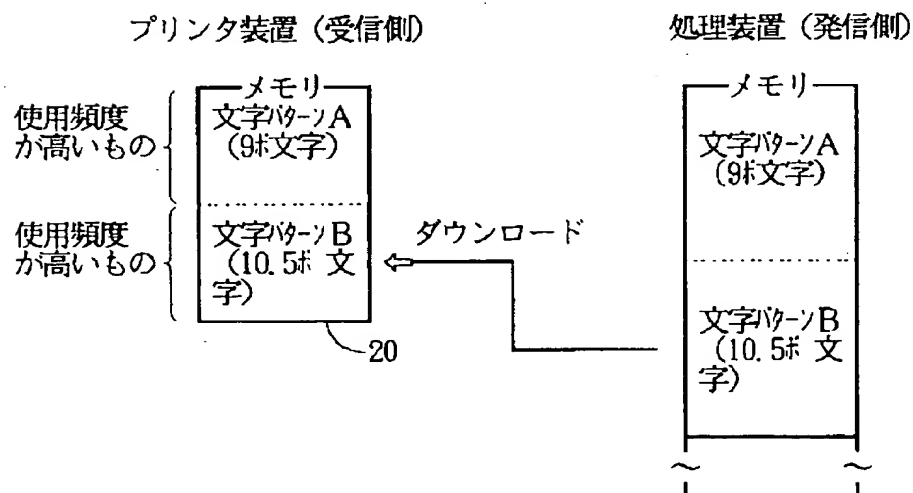
DRAWINGS

[Drawing 1]

本発明の原理を説明する図（その1）



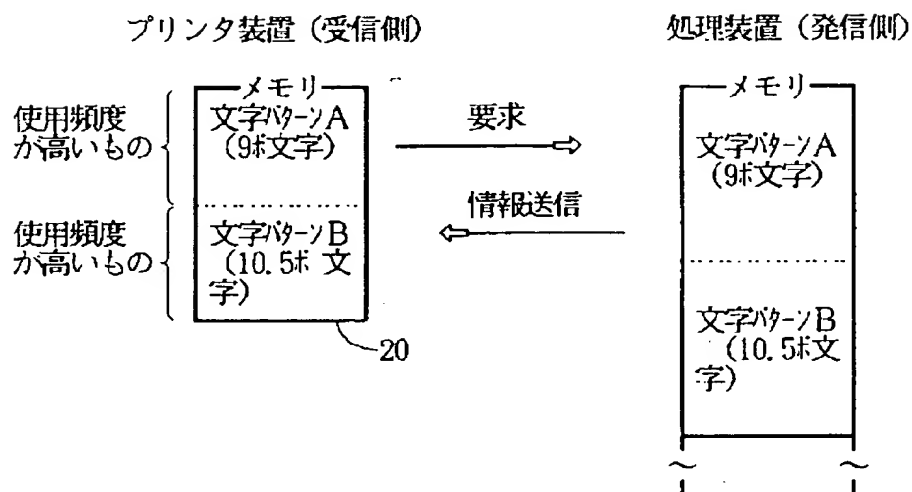
(a)



(b)

[Drawing 2]

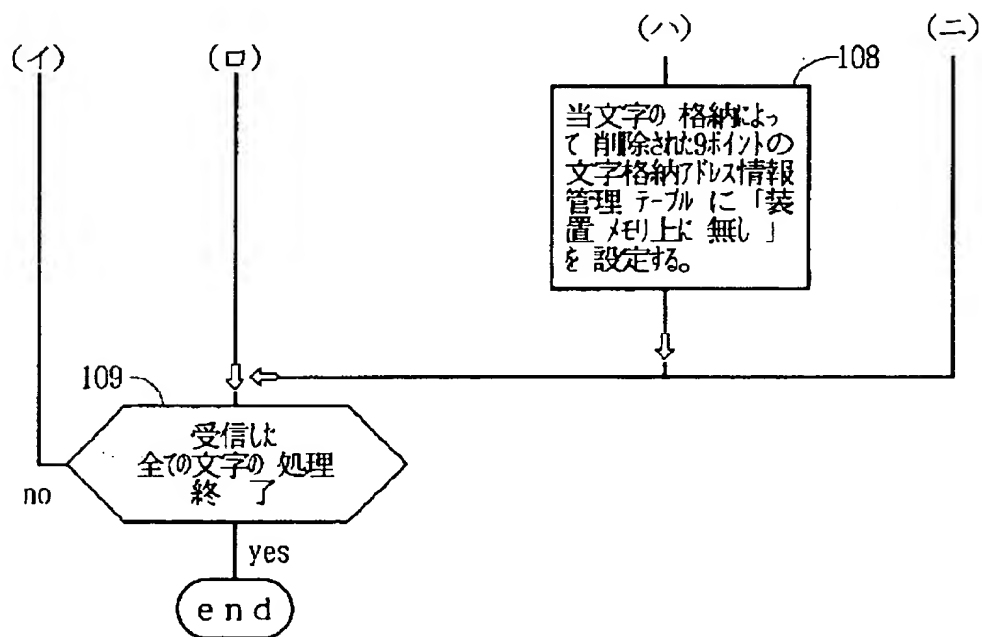
本発明の原理を説明する図（その2）



(c)

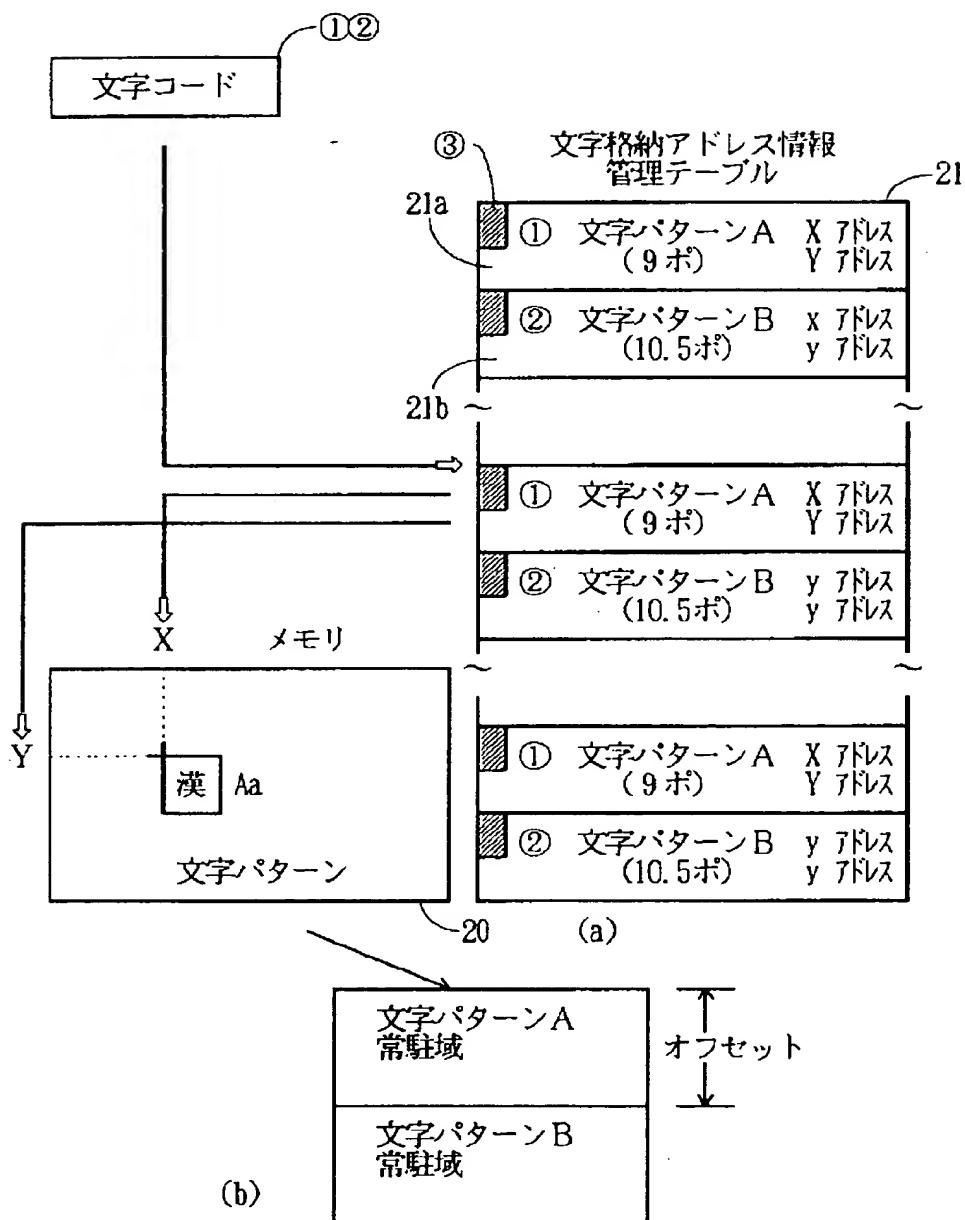
[Drawing 5]

本発明の一実施例を示した図（その3）



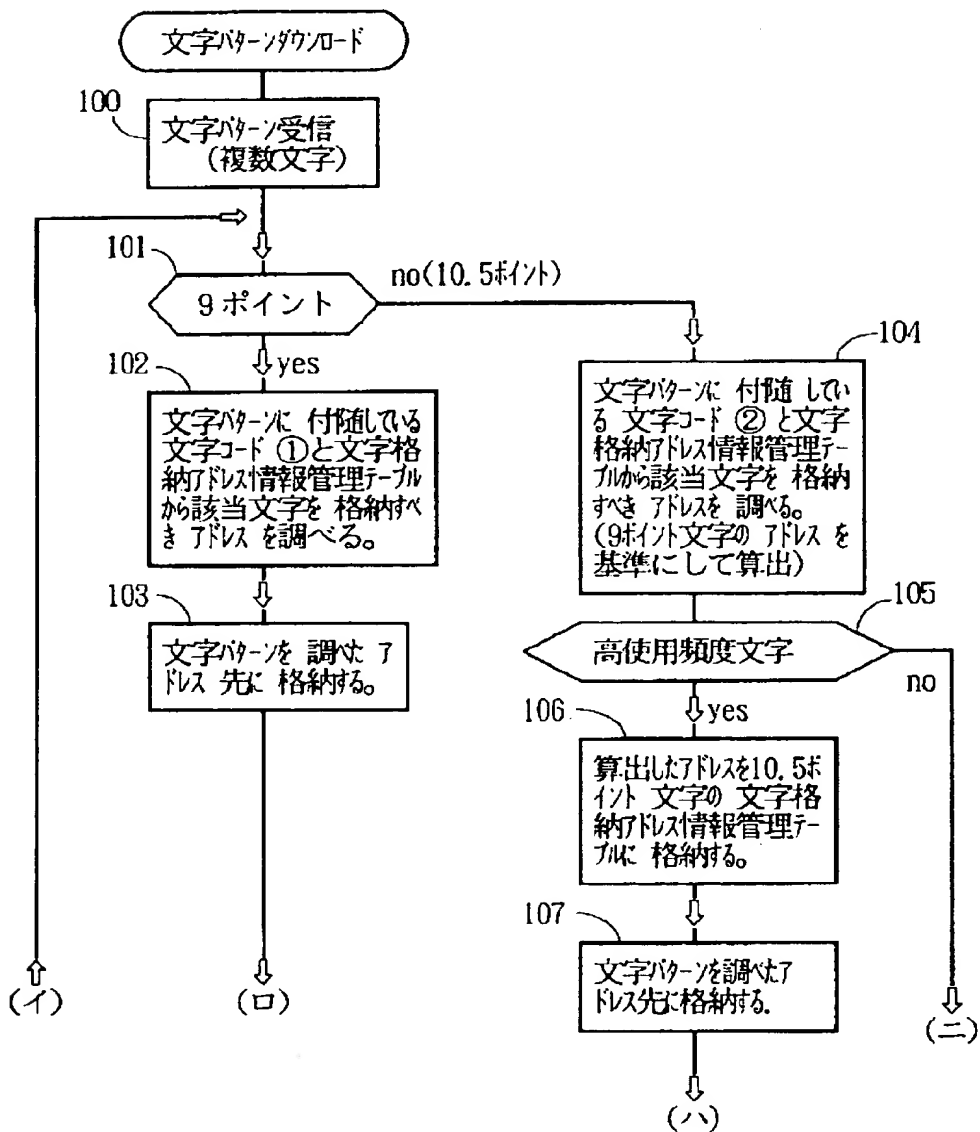
[Drawing 3]

本発明の一実施例を示した図（その1）



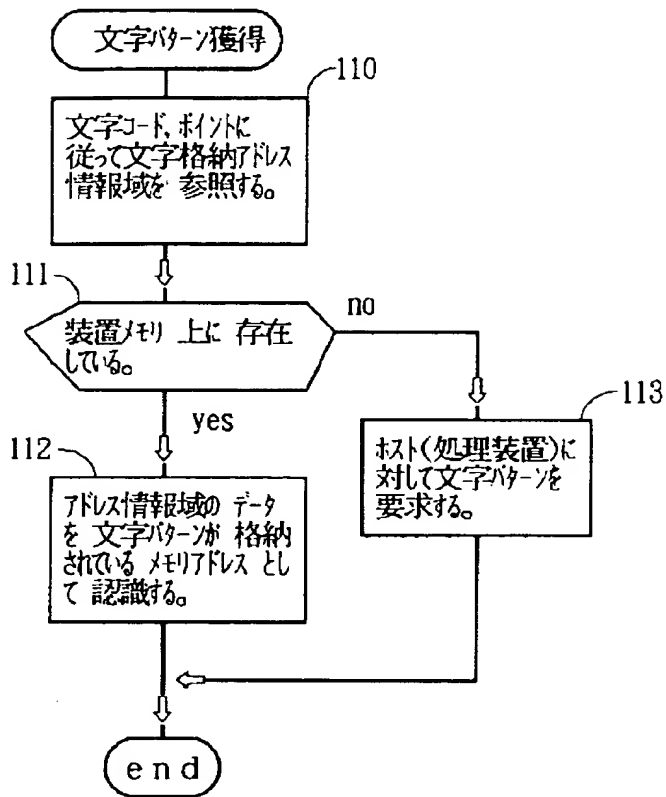
[Drawing 4]

本発明の一実施例を示した図（その2）



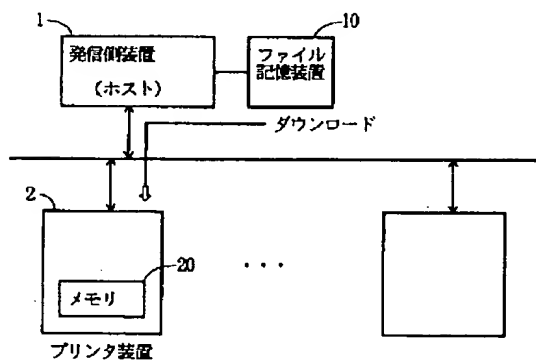
[Drawing 6]

本発明の一実施例を示した図（その４）



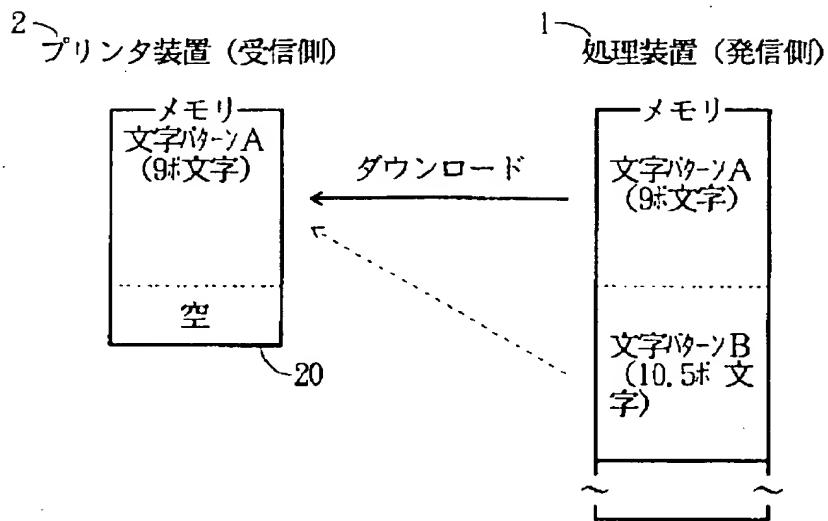
[Drawing 7]

従来の文字パターン格納方法を説明する図（その１）

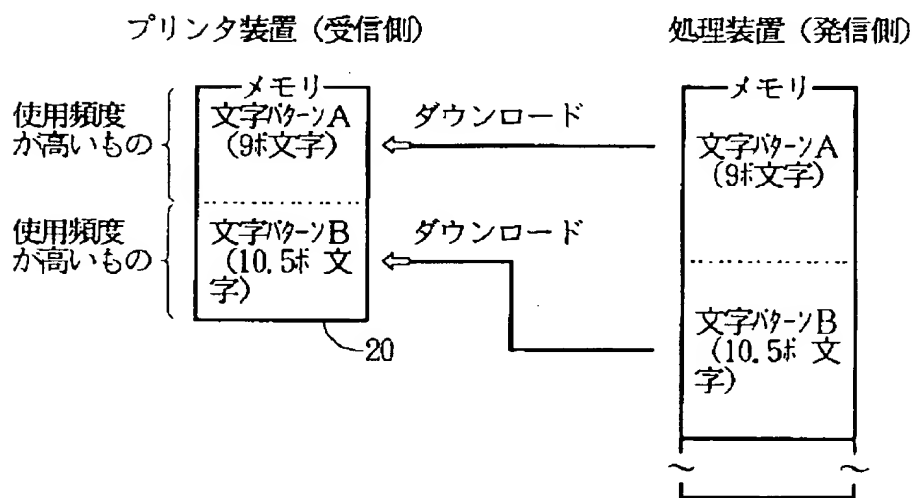


[Drawing 8]

従来の文字パターン格納方法を説明する図（その2）



(a)



(b)

[Translation done.]

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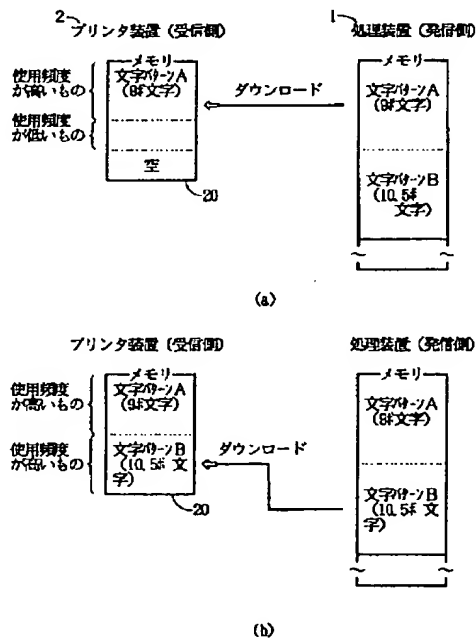
(54)【発明の名称】 使用頻度別文字パターン分割格納方法

(57)【要約】

【目的】 本発明は、文字パターンをホストからダウンロードして使用する装置（プリンタ装置）における文字パターン分割格納方法に関し、メモリの使用効率を向上させる。

【構成】 基本機能である文字パターンAのみを使用する場合は、該文字パターンAの使用頻度の高いものと、使用頻度の低いものをメモリの許容範囲内で領域を分けて格納し、別の文字パターンBを使用する際には、該文字パターンBの使用頻度の高いものを、上記文字パターンAの使用頻度の低いものと交換して格納し、装置内のメモリにない文字パターンを使用する場合には、ホストに要求して、特に、装置内のメモリに格納することなく使用する。

本発明の原理を説明する図（その1）



【特許請求の範囲】

【請求項 1】文字パターンを発信側装置（ホスト）(1) からダウンロードして使用する受信側装置 (2) において、1 つの文字パターン A のみを使用する場合は、該文字パターン A の使用頻度の高いものと、使用頻度の低いものとを、別々のアドレス領域で管理して、該受信側装置 (2) のメモリ (20) の許容範囲内で格納し、他の文字パターン B を使用する際には、該文字パターン B の使用頻度の高いものを、上記文字パターン A の使用頻度の低いものと交換して、該メモリ (20) に格納し、

該受信装置内のメモリ (20) にない文字パターン A、又は、B を使用する場合には、発信側装置（ホスト）(1) に要求して、特に、受信装置 (2) 内のメモリ (20) に格納することなく使用することを特徴とする使用頻度別文字パターン分割格納方法。

【請求項 2】文字パターンを発信側装置（ホスト）(1) からダウンロードして使用する受信側装置 (2) において、1 つの文字パターン A と他の文字パターン B とを対にして、且つ、使用頻度別に、格納アドレス (X, Y, x, y) を、所定の位置に割当てて管理する文字格納アドレス情報管理テーブル (21) を設けて、

発信側装置（ホスト）(1) から受信した 1 つの文字パターン A に付随している文字コード (①) を基に、上記文字格納アドレス情報管理テーブル (21) を検索して、該当文字 Aa~ を格納するメモリ (20) のアドレス (X, Y) の情報域 (21a) から、該アドレス (X, Y) を検知し、該検知したアドレス (X, Y) に該当の文字 Aa~ を格納し、

該発信側装置（ホスト）(1) から受信した文字パターンに付随している文字コードが他の文字パターン B であることを指示しているときには、該文字パターン B に付随している文字コード (②) を基に、上記文字格納アドレス情報管理テーブル (21) を検索して、該当文字 Aa~ を格納するメモリ (20) の文字パターン A に対応した格納アドレス (X, Y) を検知し、

該検知したアドレス (X, Y) が高使用頻度文字であると認識した場合には、該検知した格納アドレス (X, Y) に、上記文字パターン A の文字を格納するメモリ領域を示すアドレス値を「オフセット」として加算したアドレス (x, y) を生成し、該生成したアドレス (x, y) を上記文字格納アドレス情報管理テーブル (21) の、上記文字パターン B に対応する文字格納アドレス情報域 (21b) に設定し、該設定されたアドレス (x, y) に、該文字パターン B の文字 Ba~ を格納し、

該当文字 Ba~ の格納によって、削除された上記文字パターン A の低使用頻度の文字 Ax~ に対応する上記文字格納アドレス情報管理テーブル (21) の文字格納アドレス情報域 (21a) の、所定のビットに「装置メモリ上に無し」のフラグ (③) を設定し、

該検知したアドレス (X, Y) が高使用頻度文字でないと認識した場合には、その儘、文字パターンの格納を行うこ

となく、上記発信側装置（ホスト）(1) から受信した他の文字の格納処理に遷移することを特徴とする使用頻度別文字パターン分割格納方法。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、文字パターンをホストからダウンロードして使用する装置、例えば、プリンタ装置における文字パターンの分割格納方法に関する。

【0002】最近のプリンタ装置では、多種多様な印刷形式が要求されており、印刷に必要とする文字パターンの種別も多様化する動向にあり、該文字パターンを上位のホストからダウンロードする場合、上記多種多様な印刷形式を実現する為に、必要とする文字パターンを、効果的に、且つ、経済的に、当該プリンタ装置のメモリに格納しておく方法が要求される。

【0003】

【従来の技術】図 7、図 8 は、従来の文字パターン格納方法を説明する図であり、図 7 はデータ処理システムの構成例を示し、図 8 (a) は文字パターン A、例えば、9 ポイントの文字パターン、又は、文字パターン B、例えば、10.5 ポイントの文字パターンを格納する場合を示し、図 8 (b) は文字パターン A、B について、使用頻度の高いものを格納しておく場合を示している。

【0004】図 7 に示したデータ処理システムにおいて、プリンタ装置 2 は、上位装置（ホスト）1 に接続されているファイル記憶装置 10 から、印刷に必要な文字パターンをダウンロードして、自己のメモリ（ビットマップメモリ）20 内に格納し、上位装置（ホスト）1 が指示する文字で印刷を行う。

【0005】この場合、プリンタ装置 2 の基本機能として、例えば、9 ポイントの文字パターン A があり、付加機能として、10.5 ポイントの文字パターン B が必要であるとする。そして、該文字パターン A と文字パターン B の合計を格納しようとする、該プリンタ装置 2 の、上記メモリ 20 の容量を上回っているものとする。

【0006】機能の実現に必要な情報が、プリンタ装置 2 の上記メモリ 20 の容量を越えている場合、従来は、図 8 (a)、(b) の 2 通りの対処方法を探っていた。図 8 (a) に示した方法は、必要な文字パターン A、又は、B を、使用頻度の順序に関係なく、ばらばらの状態で、全てを該メモリ 20 に格納していた。

【0007】図 8 (b) に示した方法では、最初から上記文字パターン A、及び、B の使用頻度の高いものだけを、該メモリ 20 に格納していた。

【0008】

【発明が解決しようとする課題】従って、図 8 (a) に示した格納方法では、基本機能である、例えば、文字パターン A（例えば、9 ポイント）が使用頻度に関係なく格納されている為、今格納されていない他の文字パターン B（例えば、10.5 ポイントの文字パターン）が必要にな

って、該メモリ 20 の所定の領域にダウンロードすると、基本機能として必要である 9 ポイントの文字パターン A の内の、使用頻度の高い文字パターンが文字パターン B に置き替えられて、メモリ 20 上に存在しなくなってしまうという問題があった。

【0009】又、図 8 (b) に示した格納方法では、文字パターン B を使用しない場合でも、該文字パターン B により、基本機能の文字パターン A の一部が、該メモリ 20 上に存在しなくなるため、印刷に必要な文字パターンを獲得する性能が低下してしまうという問題があった。

【0010】本発明は上記従来の欠点に鑑み、文字パターンをホストからダウンロードして使用する装置、例えば、プリンタ装置において、文字パターンをメモリに分割して格納する場合に、メモリの使用効率を向上させることができる文字パターン格納方法を提供することを目的とするものである。

【0011】

【課題を解決するための手段】図 1、図 2 は、本発明の原理を説明する図である。上記の問題点は、下記の如くに構成した使用頻度別の文字パターン分割格納方法によって解決される。

【0012】(1) 文字パターンを発信側装置 (ホスト) 1 からダウンロードして使用する受信側装置 2 において、1 つの文字パターン A のみを使用する場合は、該文字パターン A の使用頻度の高いものと、使用頻度の低いものとを、別々のアドレス領域で管理して、該受信側装置 2 のメモリ 20 の許容範囲内で格納し、他の文字パターン B を使用する際には、該文字パターン B の使用頻度の高いものを、上記文字パターン A の使用頻度の低いものと交換して、該メモリ 20 に格納し、該受信側装置内のメモリ 20 にない文字パターン A、又は、B を使用する場合には、発信側装置 (ホスト) 1 に要求して、特に、受信装置 2 内のメモリ 20 に格納することなく使用するように構成する。

【0013】(2) 文字パターンを発信側装置 (ホスト) 1 からダウンロードして使用する受信側装置 2 において、1 つの文字パターン A と他の文字パターン B とを対にして、且つ、使用頻度別に、格納アドレス (X, Y, x, y) を、所定の位置に割当てて管理する文字格納アドレス情報管理テーブル 21 を設けて、発信側装置 (ホスト) 1 から受信した 1 つの文字パターン A に付随している文字コード①を基に、上記文字格納アドレス情報管理テーブル 21 を検索して、該当文字 Aa を格納するメモリ 20 のアドレス (X, Y) の情報域 21a から該アドレス (X, Y) を検知し、該検知したアドレス (X, Y) に該当の文字 Aa を格納し、該発信側装置 (ホスト) 1 から受信した文字パターンに付随している文字コードが他の文字パターン B であることを指示しているときには、該文字パターン B に付随している文字コード②を基に、上記文字格納アドレス情報管理テーブル 21 を検索して、該当文字 Aa を

格納するメモリ 20 の文字パターン A に対応した格納アドレス (X, Y) を検知し、該検知したアドレス (X, Y) が高使用頻度文字であると認識した場合には、該検知した格納アドレス (X, Y) に、上記文字パターン A の文字を格納するメモリ領域を示すアドレス値を「オフセット」として加算したアドレス (x, y) を生成し、該生成したアドレス (x, y) を上記文字格納アドレス情報管理テーブル 21 の、上記文字パターン B に対応する文字格納アドレス情報域 21b に設定し、該設定されたアドレス (x, y) に、該文字パターン B の文字 Ba を格納し、該当文字 Ba の格納によって、削除された上記文字パターン A の低使用頻度の文字 Ax に対応する上記文字格納アドレス情報管理テーブル 21 の文字格納アドレス情報域 21a の、所定のビットに「装置メモリ上に無し」のフラグ③を設定し、該検知したアドレスが高使用頻度文字でないと認識した場合には、その儘、文字パターンの格納を行うことなく、上記発信側装置 (ホスト) 1 から受信した他の文字の格納処理に遷移するように構成する。

【0014】

【作用】即ち、本発明は、ダウンロード方法を採用する装置 (受信側)、例えば、プリンタ装置において、限られた容量のメモリに有効に情報 (文字パターン情報) を格納するための方法である。

【0015】該プリンタ装置の基本機能である文字パターン A による印刷を行うためには、文字パターン A の情報が必要であり、付加機能である文字パターン B による印刷を行う際には文字パターン B の情報が必要であるとする。そして、文字パターン A と B の情報の合計が、該プリンタ装置のメモリ容量を上回っていたとする。

【0016】こういう場合、付加機能である文字パターン B は使用せずに、基本機能である文字パターン A のみを使用する場合には、該文字パターン A の情報のみを可能な限りメモリに格納する (発信側の装置 (ホスト) より受信)。このとき、本発明においては、使用頻度の高い文字パターン A と、使用頻度の低い文字パターン A とを領域を分けて格納しておく。

【0017】そして、該プリンタ装置の使用者が、上記付加機能である文字パターン B を選択した場合、その時点で、文字パターン B の中で使用頻度の高いものをメモリの空領域、ならびに、上記文字パターン A の中で、使用頻度が比較的低いものの領域に格納する (この結果、元の使用頻度の比較的低い文字パターン A の情報は、文字パターン B の情報に置き換えられ、メモリ上から削除される)。

【0018】つまり、文字パターン A、B の中で、使用頻度が高いものから順に選択され、メモリの許容範囲内で格納される結果となる。実際に、基本機能である文字パターン A (又は、付加機能である文字パターン B) で印刷する場合には、文字パターン A (B) の情報中で、必要とする情報がメモリ上に格納されている場合には、

そこから直接獲得し、又、メモリ上に無い場合は発信側装置（ホスト）に必要な情報（文字パターン情報）を要求する。

【0019】このようにすると、付加機能である文字パターンBを使用しない場合、する場合共に、メモリを最大限に利用することができる。即ち、付加機能である文字パターンBを使用しない場合は、基本機能である文字パターンAのみをメモリ許容範囲内で可能な限り格納し、付加機能である文字パターンBを使用する場合には、該文字パターンBの使用頻度の高いものと、基本機能である文字パターンAの情報の内の、使用頻度の低いものを交換（置き換え）することによって、常に、メモリを最大限に活用することができる。

【0020】

【実施例】以下本発明の実施例を図面によって詳述する。前述の図1、図2は、本発明の原理を説明する図であり、図3～図5は、本発明の一実施例を示した図であって、図3は、文字コード①、②と、文字格納アドレス情報管理テーブルと、文字パターンを格納するメモリ（ビットマップメモリ）との関係を示し、図4、図5は

本発明による文字パターンの格納動作のフローを示し、図6は、文字パターンの獲得処理フローを示している。

【0021】本発明においては、文字パターン①、②をホストからダウンロードして使用する装置（プリンタ装置）2において、基本機能である文字パターンAのみを使用する場合は、該文字パターンAの使用頻度の高いものと、使用頻度の低いものをメモリの許容範囲内で領域を分けて格納し、別の文字パターンBを使用する際には、該文字パターンBの使用頻度の高いものを、上記文字パターンAの使用頻度の低いものと交換して格納し、装置2内のメモリ20にない文字パターンを使用する場合には、ホスト1に要求して、特に、装置2内のメモリ20に格納することなく使用する手段、具体的には、文字格納アドレス情報管理テーブル21による格納管理手段が、本発明を実施するのに必要な手段である。尚、全図を通して同じ符号は同じ対象物を示している。

【0022】以下、図1、2を参照しながら、図3～図6によって、本発明の使用頻度別文字パターン分割格納方法を説明する。先ず、図3(a)は、ホスト1より受信した文字パターンに付随している文字コード①、②と、文字格納アドレス情報管理テーブル21と、文字パターンを格納するビットマップメモリ20との関係を示している。

【0023】上記文字格納アドレス情報管理テーブル21は、図示されている如くに、基本機能である文字パターンA（例えば、9ポイント文字）と、付加機能である文字パターンB（例えば、10.5ポイント文字）の、ビットマップメモリ（メモリ）20上の格納アドレス(X,Yと、x,y)を対にして、且つ、使用頻度の高い文字から順に、図3(b)に示されているように、領域を分けたアド

レス(X,Yと、x,y)を管理する構成になっており、初期状態（文字パターンをダウンロードする前の状態）においては、基本機能である文字パターンA（9ポイント文字）に対応するアドレスは全て設定されているが、付加機能である文字パターンB（10.5ポイント文字）のアドレス格納域には、「メモリ上には存在しない」ことを示すフラグ（例えば、該文字格納アドレス情報管理テーブル21の最上位ビット）③が“オン”にセットされている。

【0024】図4、図5は、本発明による文字パターン分割格納方法を示す動作フローである。先ず、発信側装置（ホスト）1から複数の文字パターンがダウンロードされてくる。（処理ステップ100参照）

最初は、基本機能である文字パターンA（9ポイント文字）の文字パターンが受信されてくる。（処理ステップ101参照）

該受信された文字パターンに付随されている文字コード①を基に、図3(a)に示されているように、文字格納アドレス情報管理テーブル21を検索して、該当文字コード①に対応する領域の、上記基本機能である文字パターンAのアドレス情報域21aから、該当文字のパターンを格納すべきビットマップメモリ20上のアドレス(X,Y)を調べ、そのアドレス(X,Y)に、上記受信した文字コードの文字パターンA（図3(a)の例では“漢”なる文字Aaのパターン）を格納する。（処理ステップ102,103参照）

上記の動作を、該文字パターンAとして、最初に受信した全ての文字について行う。前述のように、該当文字の格納アドレス(X,Y)は、使用頻度に対応して、予め、定められているので、使用頻度の高い文字から順に、領域を分けて、図3(b)のように格納される。（処理ステップ109参照）

次に、付加機能である文字パターンB（10.5ポイント文字）の文字パターンが複数文字分受信される。

【0025】該受信された文字パターンに付随されている文字コード②を基に、図3(a)に示されているように、文字格納アドレス情報管理テーブル21を検索して、該当文字コード②に対応する領域の、上記基本機能である文字パターンAのアドレス情報域21aから、該当文字のパターンを格納すべきビットマップメモリ20上のアドレス(X,Y)を調べ、それに、該当文字パターンAの格納領域を示すアドレス値（図3(b)参照）を「オフセット」値として加算し、当該文字パターンBの該当の文字パターンを格納すべき、ビットマップメモリ20上のアドレス(x,y)を算出する。（処理ステップ104参照）

このアドレス(x,y)が、文字パターンBの中で、高使用頻度の文字であるかどうかを、該アドレス(x,y)を見て判定し、高使用頻度の文字であると判定された場合には、次の処理ステップ106に進むが、高使用頻度の文字

であると判定されなかった場合には、最早、ビットマップメモリ 20 上に格納する文字ではないと認識して、次の受信文字の格納処理に移る為に、上記処理ステップ 109の処理に移る。(処理ステップ 105参照)

該受信した文字パターンBの文字が、高使用頻度の文字であると判定された場合には、上記算出されたアドレス(x,y)を、上記文字格納アドレス情報管理テーブル 21の、該文字パターンBに対応するアドレス情報域 21bに格納する。(処理ステップ 106参照)

上記受信した文字コード②の文字パターンBを、上記ビットマップメモリ 20上の上記算出したアドレス(x,y)に格納する。(処理ステップ 107)

前述のように、該文字パターンBの高頻度使用文字パターンの格納領域は、文字パターンAの比較的に使用頻度が低い文字パターンが格納されている領域であるので、該当文字の格納によって削除(具体的には、置き換え)された文字パターンA(9ポイント)の文字格納アドレス情報管理テーブル域 21aの、例えば、最上位ビット位置に、「プリンタ装置のビットマップメモリ 20 上には存在しない」ことを示すフラグ③を設定(“オン”)する。

【0026】上記の動作及び、文字パターン獲得動作を、図1、図2、及び、図6の動作フローで説明すると、通常、基本機能である9ポイント文字による印刷の実現(本実施例では、基本文字サイズを9ポイントとする)のために、プリンタ装置 2には9ポイント文字パターンの全てを、メモリ 20 に格納する。この場合、どの文字を印字する場合でも、直接プリンタ装置 2内のメモリ上から直接文字パターンを得ることができる。(図1(a),図6の処理ステップ 110~112 参照)

9ポイント文字の他に、例えば10.5ポイント文字の印字が要求された場合には、使用頻度の高い文字を9ポイント/10.5ポイント共に、該プリンタ装置 2内のメモリ 20 に格納し、必要な文字パターンを、該メモリ 20 から獲得して使用する。(図1(b),図6の処理ステップ 110~112 参照)

これにより、使用頻度の低く、プリンタ装置 2内メモリ 20 から削除された、基本文字の9ポイント文字パターン、および、格納しきれなかった10.5ポイント文字パターンは、発信側装置(ホスト)1に対し要求することによって獲得する。(図2(c),図6の処理ステップ 113参照)

こうすることによって、プリンタ装置 2は、使用される機能(9ポイントのみ、或いは、9、10.5ポイント

共)に応じて、所持するメモリ資源を最大限に生かした印字性能を発揮することができる。

【0027】

【発明の効果】以上、詳細に説明したように、本発明の使用頻度別文字パターン分割格納方法は、文字パターンを発信側装置(ホスト)からダウンロードして使用する受信側装置(プリンタ装置)において、基本機能の文字パターンAのみを使用する場合は、該文字パターンAの使用頻度の高いものと、使用頻度の低いものとを、別々のアドレス領域で管理して、該プリンタ装置のメモリの許容範囲内で格納し、付加機能である文字パターンBを使用する際には、該文字パターンBの使用頻度の高いものを、上記文字パターンAの使用頻度の低いものと交換して、該メモリに格納し、該プリンタ装置内のメモリにない文字パターンA、又は、Bを使用する場合には、発信側装置(ホスト)に要求して、特に、プリンタ装置内のメモリに格納することなく使用するようにしたものであるので、プリンタ装置のメモリ容量の限定によるサポート機能の制約を緩和させる効果を生み、ならびに、メモリの利用効率の向上に寄与するところが大きいという効果が得られる。

【図面の簡単な説明】

【図1】本発明の原理を説明する図(その1)

【図2】本発明の原理を説明する図(その2)

【図3】本発明の一実施例を示した図(その1)

【図4】本発明の一実施例を示した図(その2)

【図5】本発明の一実施例を示した図(その3)

【図6】本発明の一実施例を示した図(その4)

【図7】従来の文字パターン格納方法を説明する図(その1)

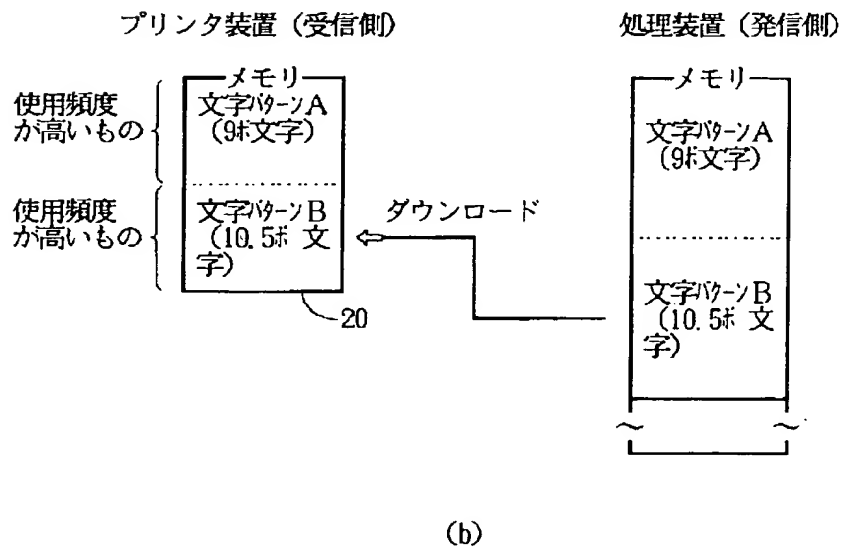
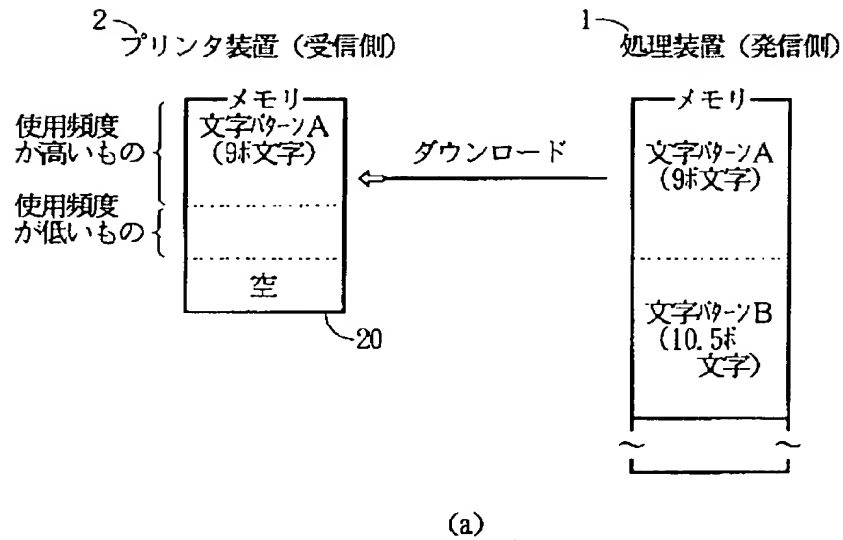
【図8】従来の文字パターン格納方法を説明する図(その2)

【符号の説明】

- | | | | |
|--------------------|------------------|---|-----------------|
| 1 | 発信側装置(ホスト) | 2 | 受信側装置、又は、プリンタ装置 |
| 20 | メモリ(ビットマップメモリ) | | |
| 21 | 文字格納アドレス情報管理テーブル | | |
| 21a | 文字パターンAのアドレス情報域 | | |
| 21b | 文字パターンBのアドレス情報域 | | |
| ① | 文字パターンAに付随の文字コード | | |
| ② | 文字パターンBに付随の文字コード | | |
| ③ | 「装置メモリ上に無し」のフラグ | | |
| 100 ~107, 110 ~113 | 処理ステップ | | |

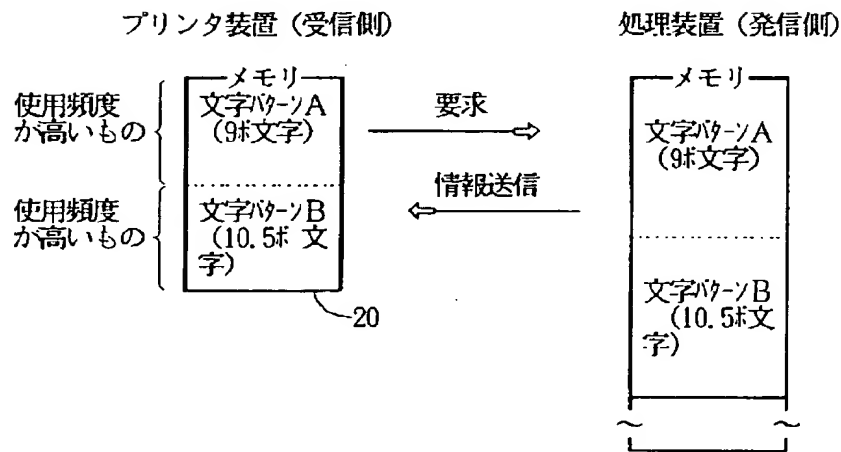
【図1】

本発明の原理を説明する図（その1）



【図2】

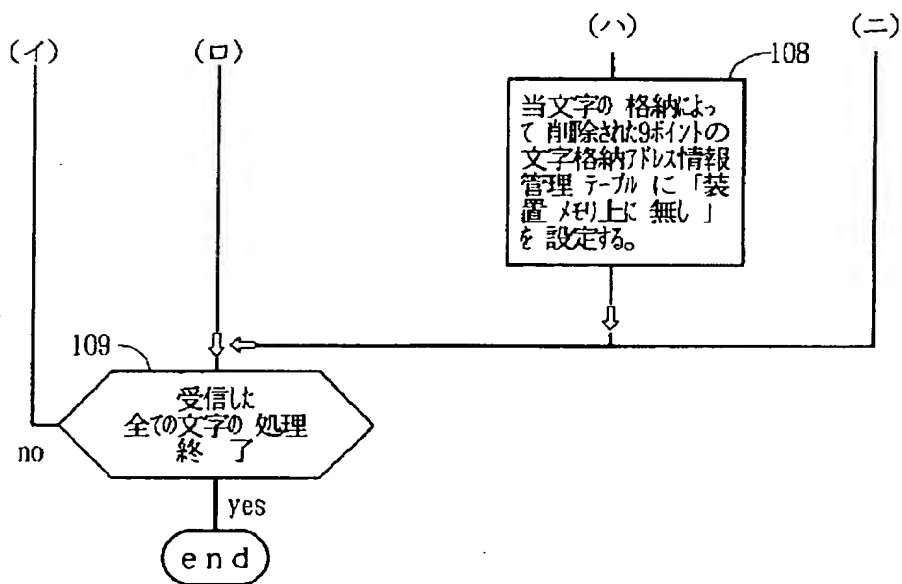
本発明の原理を説明する図（その2）



(c)

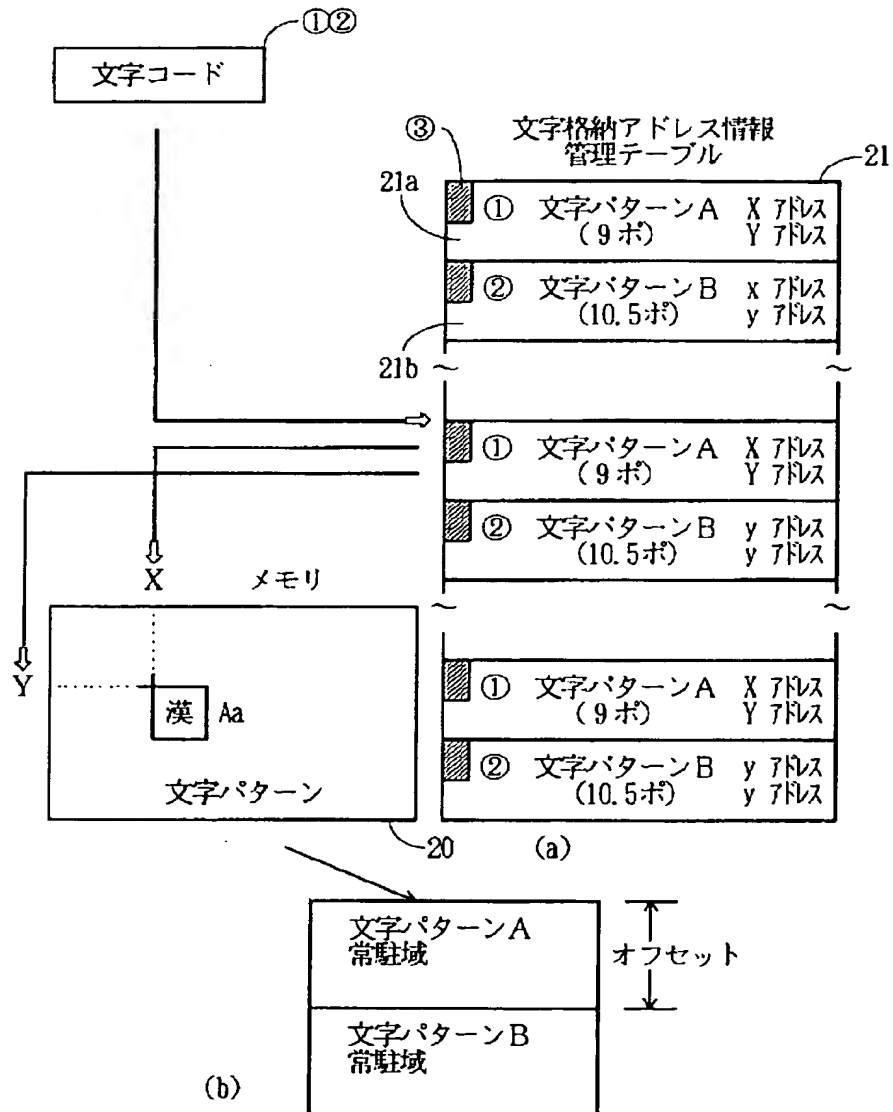
【図5】

本発明の一実施例を示した図（その3）



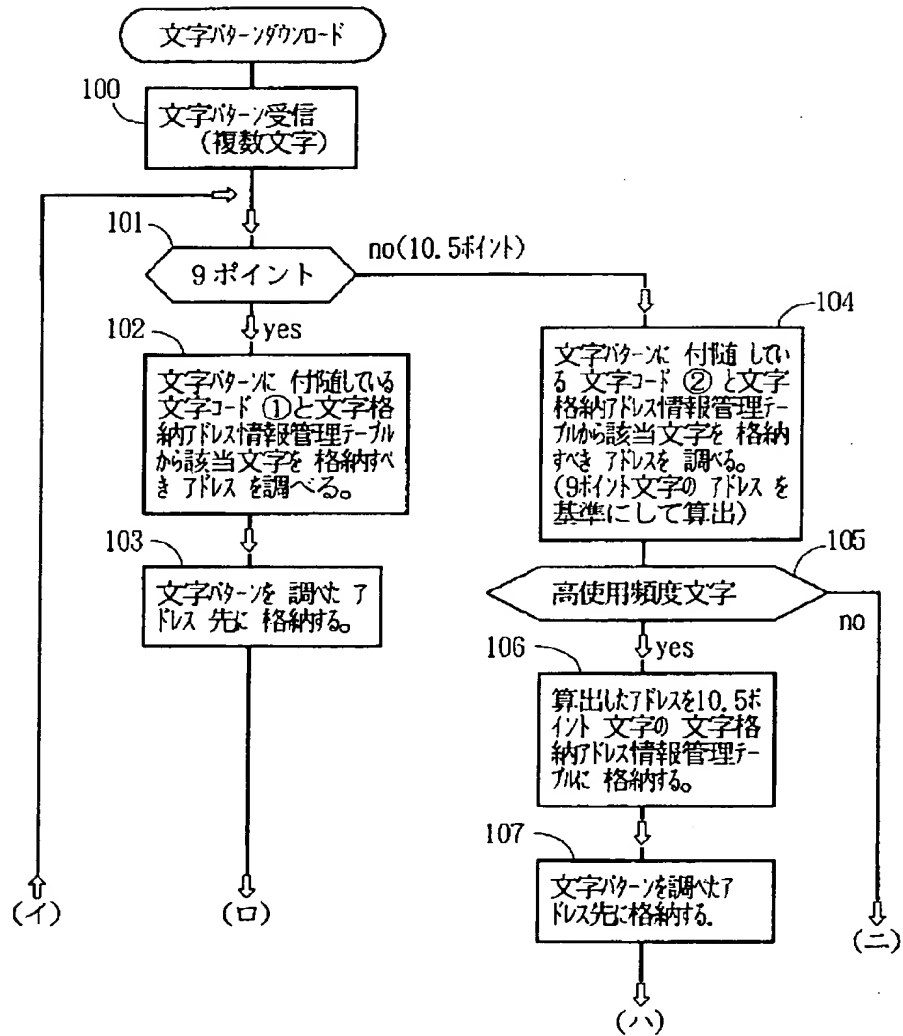
【図3】

本発明の一実施例を示した図（その1）



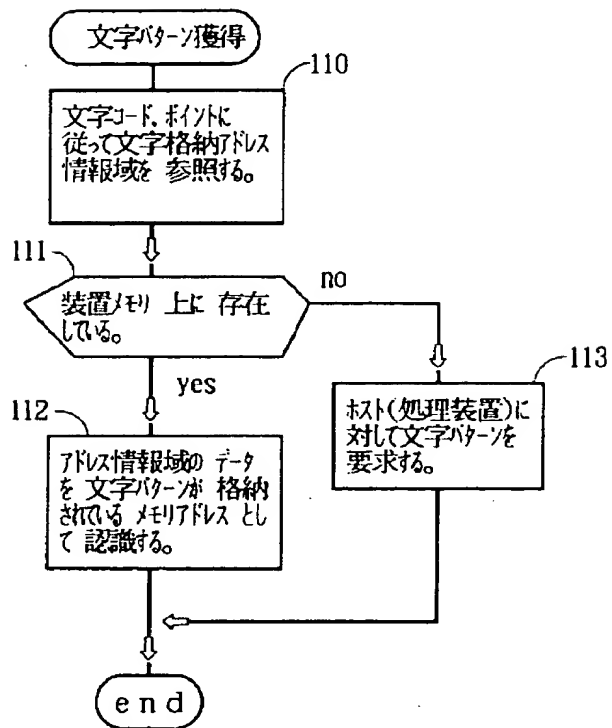
【図4】

本発明の一実施例を示した図（その2）



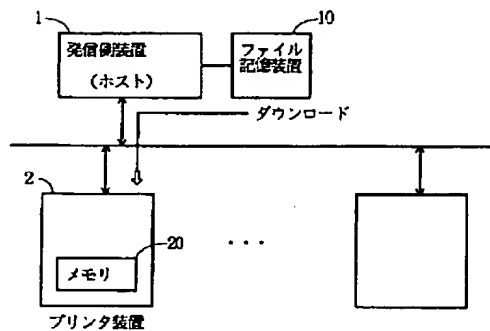
【図6】

本発明の一実施例を示した図（その4）



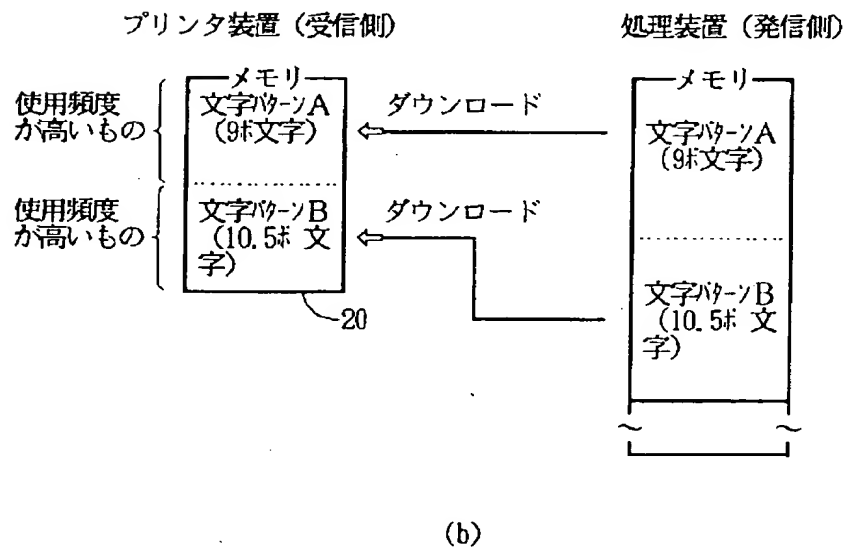
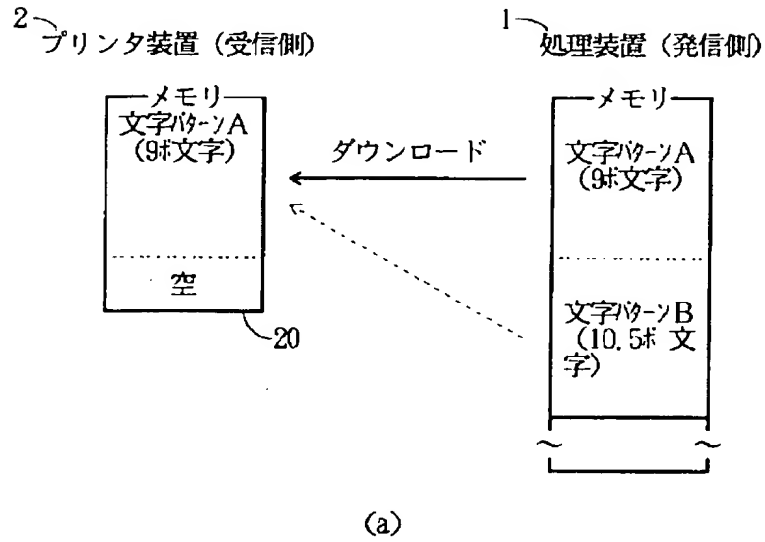
【図7】

従来の文字パターン格納方法を説明する図（その1）



【図8】

従来の文字パターン格納方法を説明する図（その2）



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